SEQUENCE LISTING

<110> Hu, Yi
      Turner, C. Alexander Jr.
      Nepomnichy, Boris
      Scoville, John
      Walke, D. Wade

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Leu Ala Met Phe Ile Arg Ser Gly Gly Arg Leu Gly Gln Ala Leu Leu
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Arg Ala Leu Pro Ala Pro Ser Pro Gly Trp Arg Ala Trp Pro Leu Pro
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3

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Ile Leu Gly Ile Leu Ala Ser Leu Val Asn Gly Ala Cys Leu Pro Leu
    50                  55                  60
Met Pro Leu Val Leu Gly Glu Met Ser Asp Asn Leu Ile Ser Gly Cys
65                  70                  75                  80
Leu Val Gln Thr Asn Thr Ser Asn Tyr Gln Asn Cys Thr Gln Ser Gln
                85                  90                  95
Glu Lys Leu Asn Glu Asp Met Thr Leu Leu Pro Leu Tyr Tyr Val Gly
            100                 105                 110
Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile Ser Leu Trp
        115                 120                 125
Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys Gln Phe Phe
    130                 135                 140
His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser Cys Asp Ile
145                 150                 155                 160
Gly Glu Leu Asn Thr Arg Met Thr Asp Asp Ile Asp Lys Ile Ser Asp
                165                 170                 175
Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser Thr Phe
                180                 185                 190
Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu Thr Leu
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Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala Ala Cys
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4

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Val Ser Leu Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr Gly Leu
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Ala Phe Trp Tyr Gly Thr Ser Leu Ile Leu Asn Gly Glu Pro Gly Tyr
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Tyr Cys Ile Gly Ala Ala Val Pro His Phe Glu Thr Phe Ala Ile Ala
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Arg Gly Ala Ala Phe His Ile Phe Gln Val Ile Asp Lys Lys Pro Ser
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Ile Asp Asn Phe Ser Thr Ala Gly Tyr Lys Pro Glu Ser Ile Glu Gly
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Thr Val Glu Phe Lys Asn Val Ser Phe Asn Tyr Pro Ser Arg Pro Ser
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Val Ala Leu Val Gly Leu Asn Ala Ser Gly Lys Ser Thr Val Val Gln
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Leu Leu Gln Arg Leu Tyr Asp Pro Asp Asp Gly Phe Ile Met Val Asp
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Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg Asp His Ile
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465                    470                    475                    480
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                  485                    490                    495
Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu Phe Pro Asn
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Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met Ser Gly Gly
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Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg Asn Pro Lys
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Leu Met Ala Lys Arg Gly Leu Tyr Tyr Ser Leu Val Met Ser Gln Asp
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Ile Lys Lys Ala Asp Glu Gln Met Glu Ser Met Thr Tyr Ser Thr Glu
625                    630                    635                    640
Arg Lys Thr Asn Ser Leu Pro Leu His Ser Val Lys Ser Ile Lys Ser
                  645                    650                    655
Asp Phe Ile Asp Lys Ala Glu Glu Ser Thr Gln Ser Lys Glu Ile Ser
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Leu Pro Glu Val Ser Leu Leu Lys Ile Leu Lys Leu Asn Lys Pro Glu
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Met Ile Phe Val Ile Leu Gly Val Ile Cys Phe Val Ser Tyr Phe Met
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Gln Gly Leu Phe Tyr Gly Arg Ala Gly Glu Ile Leu Pro Met Arg Leu
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Arg His Leu Ala Phe Lys Ala Met Leu Tyr Gln Asp Ile Ala Trp Phe
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              805                   810                   815
Thr Gln Asn Ala Thr Asn Met Gly Leu Ser Val Ile Ile Ser Phe Ile
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Tyr Gly Trp Glu Met Thr Phe Leu Ile Leu Ser Ile Ala Pro Val Leu
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Ala Val Thr Gly Met Ile Glu Thr Ala Ala Met Thr Gly Phe Ala Asn
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Lys Asp Lys Gln Glu Leu Lys His Ala Gly Lys Ile Ala Thr Glu Ala
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Leu Glu Asn Ile Arg Thr Ile Val Ser Leu Thr Arg Glu Lys Ala Phe
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Lys Lys Ala Gln Ile Ile Gly Ser Cys Tyr Ala Phe Ser His Ala Phe
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Pro Cys Arg Pro Asp Val Phe Ile Leu Arg Gly Leu Ser Leu Ser Ile
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Glu Arg Gly Lys Thr Val Ala Phe Val Gly Ser Ser Gly Cys Gly Lys
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Ser Thr Ser Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro Val Gln Gly
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Gln Val Leu Phe Asp Gly Val Asp Ala Lys Glu Leu Asn Val Gln Trp
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Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro Val Leu Phe Asn
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Cys Ser Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn Ser Arg Val Val
1105                  1110                  1115                  1120
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6

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Ala Leu Asp Asn Asp Ser Glu Lys Val Val Gln His Ala Leu Asp Lys
1185                1190                1195                1200
Ala Arg Thr Gly Arg Thr Cys Leu Val Val Thr His Arg Leu Ser Ala
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Ile Gln Asn Ala Asp Leu Ile Val Val Leu His Asn Gly Lys Ile Lys
            1220                1225                1230
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<212> DNA
<213> homo sapiens


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Met Pro Leu Val Leu Gly Glu Met Ser Asp Asn Leu Ile Ser Gly Cys
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Leu Val Gln Thr Asn Thr Ser Asn Tyr Gln Asn Cys Thr Gln Ser Gln
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Glu Lys Leu Asn Glu Asp Met Thr Leu Leu Pro Leu Tyr Tyr Val Gly
            100                 105                 110
Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile Ser Leu Trp
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Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys Gln Phe Phe
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His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser Cys Asp Ile
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8

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Ser Arg Met Val Ile Ser Leu Pro Ser Lys Glu Leu Ser Ala Tyr Ser
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Leu Lys Asp Ala Lys Asp Phe Gly Ile Lys Arg Thr Ile Ala Ser Lys
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Val Ser Leu Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr Gly Leu
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Ala Phe Trp Tyr Gly Thr Ser Leu Ile Leu Asn Gly Glu Pro Gly Tyr
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Thr Ile Gly Thr Val Leu Ala Val Phe Phe Ser Val Ile His Ser Ser
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Tyr Cys Ile Gly Ala Ala Val Pro His Phe Glu Thr Phe Ala Ile Ala
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Arg Gly Ala Ala Phe His Ile Phe Gln Val Ile Asp Lys Lys Pro Ser
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Ile Asp Asn Phe Ser Thr Ala Gly Tyr Lys Pro Glu Ser Ile Glu Gly
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Thr Val Glu Phe Lys Asn Val Ser Phe Asn Tyr Pro Ser Arg Pro Ser
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Val Ala Leu Val Gly Leu Asn Ala Ser Gly Lys Ser Thr Val Val Gln
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Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg Asp His Ile
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Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu Phe Pro Asn
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9

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Trp Pro Phe Val Val Leu Gly Thr Leu Ala Ser Val Leu Asn Gly Thr
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Val His Pro Val Phe Ser Ile Ile Phe Ala Lys Ile Ile Thr Met Phe
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Gly Asn Asn Asp Lys Thr Thr Leu Lys His Asp Ala Glu Ile Tyr Ser
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Met Ile Phe Val Ile Leu Gly Val Ile Cys Phe Val Ser Tyr Phe Met
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Gln Gly Leu Phe Tyr Gly Arg Ala Gly Glu Ile Leu Pro Met Arg Leu
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Arg His Leu Ala Phe Lys Ala Met Leu Tyr Gln Asp Ile Ala Trp Phe
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Tyr Gly Trp Glu Met Thr Phe Leu Ile Leu Ser Ile Ala Pro Val Leu
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Ala Val Thr Gly Met Ile Glu Thr Ala Ala Met Thr Gly Phe Ala Asn
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Asp Thr Cys Glu Gly Asn Leu Glu Phe Arg Glu Val Ser Phe Phe Tyr
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Pro Cys Arg Pro Asp Val Phe Ile Leu Arg Gly Leu Ser Leu Ser Ile
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Glu Arg Gly Lys Thr Val Ala Phe Val Gly Ser Ser Gly Cys Gly Lys
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Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro Val Leu Phe Asn
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Cys Ser Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn Ser Arg Val Val
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Pro Leu Asp Glu Ile Lys Glu Ala Ala Asn Ala Ala Asn Ile His Ser
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11

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